AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of processing a work piece by pulsed electric discharges in metal-gas plasmas comprising the steps of:

providing a vacuum in a processing chamber,

providing sputtering and reactive gases in the processing chamber,

producing pulsed discharges with a duty cycle of $1*10^{-7}$% to 10% in gas and vapor located between first electrodes including an anode and a magnetron sputtering cathode for creating plasma blobs of ionized gas and partially ionized metal plasma by providing a pulsed current to the first electrodes from a first pulse generator, the plasma blobs moving or spreading from a region at a surface of the magnetron sputtering cathode towards second electrodes including the work piece and the anode, and

applying a potential to the work piece from a second pulse generator including a DC power supply for charging a capacitor,

~~characterized in~~

~~that the~~ wherein the potential is applied to the work piece in such a way that a pulsed current comprising biasing pulses arises between the second electrodes, the biasing pulses being produced from a charge of the capacitor, the biasing pulses of the pulsed current between the second electrodes having or appearing with the same frequency as the pulsed discharges.

2. (Currently Amended) The method according to claim 1, ~~characterized in that~~ wherein the potential is applied to the work piece so that biasing discharges are produced between the anode and the work piece when said plasma blobs have spread to regions at the anode and at the work piece, the pulsed current comprising the biasing pulses being the current of the biasing discharges.

3. (Currently Amended) The method according to claim 1, ~~characterized in that~~ wherein the potential is applied to the work piece in such a way that the biasing pulses coincide in time with pulses to create the pulsed discharges between the first electrodes.

4. (Currently Amended) The method according to claim 1, ~~characterized in that~~ wherein the potential is applied to the work piece in such a way that the biasing pulses exist as long as a plasma exists.

5. (Currently Amended) The method according to claim 1, ~~characterized in that~~ wherein the potential is applied to the work piece in such a way that the biasing pulses start simultaneously with the pulsed discharges between the first electrodes in which plasmas are created and are terminated after the end of the decay of the plasmas created.

6. – 17. (Cancelled)

18. (Withdrawn) An installation for work piece processing by pulsed electric discharges in solid-gas plasmas comprising: a process chamber, a work piece placed in the process chamber, a system for maintaining a vacuum in the process chamber, a system for providing sputtering and reactive gases to the process chamber, first electrodes including an anode and a magnetron sputtering cathode placed in or integrated in the process chamber, second electrodes including the anode and the work piece, a plasma pulser circuit including the first electrodes for creating gas and partially ionized solid plasma blobs by pulsed discharges in the gases and vapor in the processing chamber in the region between the first electrodes, the plasma blobs moving or spreading from a region at a surface of the magnetron sputtering cathode towards the work piece and the anode, a biasing pulser circuit including the work piece for applying an electric potential to the work piece, characterized in that the plasma pulser circuit and the biasing pulser circuit are powered by the same pulser.

19. (Withdrawn) An installation according to claim 18, characterized by a work piece switch connected in a line between the work piece and the cathode.

20. (Withdrawn) An installation according to claim 19, characterized by an impedance device or a resistor, in particular an impedance device having a variable impedance or a resistor having a variable resistance, connected in the line.

21. (Withdrawn) An installation according to claim 20, characterized in that the impedance device or resistor has an impedance or a resistance of the range of 0-10 kOhm.

22. (Withdrawn/Currently Amended) An installation according to claim 18, characterized by a work piece switch connected in a line between the work piece and the magnetron sputtering cathode, a control and monitoring unit connected to the work piece switch for commanding it, the control and monitoring unit commanding the work piece switch to short-connect the work piece through said line to the magnetron sputtering cathode for a period of 0.1-10 ~~.mu.s~~ µs after each magnetron discharge breakdown.

23. (Withdrawn/Currently Amended) An installation according to claim 18, characterized by a cathode switch, an anode switch connected in a line between the work piece and the anode, a control and monitoring unit connected to the switches and commanding them so that the work piece is disconnected from the magnetron sputtering cathode by the cathode switch before the magnetron breakdown in creating a discharge between the anode and the magnetron sputtering cathode and thereafter is connected by the second work piece switch to the anode for a period of 0.1-100 ~~.mu.s~~ µs after magnetron discharge break down.

24. (Withdrawn) An installation according to claim 18, characterized by an anode switch connected in a line between the work piece and the anode, a resistor, in particular a resistor having a variable resistance, connected in the line, a control and monitoring unit connected to the anode switch for commanding it to connect the work piece to said potential, the

control and monitoring unit periodically connecting the work piece to the anode through the resistor to make the work piece adopt the potential of the anode.

25. (Withdrawn) An installation according to claim 24, characterized in that the resistor has a resistance of the range of 0-10 kOhm.

26. (Withdrawn) An installation according to claim 18, characterized in that the anode includes walls of the process chamber and is the same for plasma discharges and biasing pulses.

27. (Withdrawn) An installation according to claim 18, characterized in that the anode is an electrode placed inside the process chamber, electrically insulated therefrom and is the same for plasma discharges and biasing pulses.

28. (Withdrawn) An installation according to claim 19, characterized in that the anode includes two separate anode parts located the inside process chamber, electrically insulated therefrom it and are different for plasma discharges and biasing pulses.

29. (Withdrawn) An installation according to claim 18, characterized in that the plasma generating discharges and work piece processing discharges are produced by same electric pulser.

30. (Withdrawn) An installation according to claim 18, characterized in that the plasma generating discharges and work piece processing discharges are produced by different electric pursers.

31. (Withdrawn) An installation according to claim 18, characterized by a variable resistor connected in a line between the work piece and a terminal of an energy supply to be selectively bypassed by a bypass line.

32. (Withdrawn) An installation according to claim 18, characterized by a pulser or pulsed generator including a charged capacitor.

33. (Withdrawn) An installation according to claim 18, characterized in that the processing/biasing pulses are synchronized with the plasma generating pulses.

34. (Withdrawn) An installation according to claim 18, characterized in that the connecting and disconnecting of the work piece from electrodes is performed by solid-state switches.

35. (Currently Amended) The method according to claim 1, wherein said pulsed discharges are provided by a first high current pulse supply and said biasing pulses are provided by a second high current pulse supply.

36. (Currently Amended) The method according to claim 1, wherein the magnetron sputtering cathode and the work piece are connected to the negative pole of different high current pulse supplies.

37. (Currently Amended) The method according to claim 1, wherein said frequency of said biasing pulses and said pulsed current is 20 Hz – 20 kHz.

38. (Canceled)

39. (Canceled)

40. (Currently Amended) The method according to claim 1, ~~characterized in that the magnitude of~~ wherein a biasing current of ~~said~~ the biasing pulses has a magnitude that is at least 10% of ~~the~~ a magnitude of a magnetron discharge current of ~~said~~ the pulsed discharges.

41. (Previously presented) The method according to claim 1, characterized in that said biasing pulses and said pulsed discharges are synchronized.

42. (Previously presented) The method according to claim 1, characterized in that said pulsed discharges are produced by a pulse generator including a capacitor acting as accumulator for an electric charge, where energy stored in said capacitor is used to produce said discharges.

43. (Currently amended) A method of processing a work piece by pulsed electric discharges in metal-gas plasmas comprising the steps of:

providing a vacuum in a processing chamber,

providing sputtering and reactive gases in the processing chamber,

producing pulsed discharges in gas and vapor between first electrodes including an anode and a magnetron sputtering cathode for creating a plasma by providing a pulsed current to said first electrodes from a first pulse generator, wherein said pulsed discharges have a duty cycle of $1*10^{-7}\% - 10\%$,

applying a potential from a second pulse generator including a DC power supply for charging a capacitor to the work piece in such a way that a pulsed current comprising biasing pulses arises between second electrodes including the work piece and the anode,

the biasing pulses being produced from a charge of said capacitor, the biasing pulses of the pulsed current between the second electrodes having or appearing with the same frequency as the pulsed discharges.

44. (Currently Amended) The method according to claim 43, wherein ~~said~~ the pulsed discharges are provided by a first high current pulse supply and said biasing pulses are provided by a second high current pulse supply.

45. (Currently Amended) The method according to claim 43, wherein the magnetron sputtering cathode and the work piece are connected to the negative pole of different high current pulse supplies.

46. (Currently Amended) The method according to claim 43, wherein said frequency of said biasing pulses and said pulsed current is 20 Hz – 20 kHz.

47. (Canceled)

48. (Canceled)

49. (Currently Amended) The method according to claim 43, ~~characterized in that the magnitude of~~ wherein a biasing current of ~~said~~ the biasing pulses has a magnitude that is at least 10% of ~~the~~ a magnitude of a magnetron discharge current of said pulsed discharges.

50. (Currently Amended) The method according to claim 43, ~~characterized in that~~ wherein ~~said~~ the biasing pulses and ~~said~~ the pulsed discharges are synchronized.

51. (Currently Amended) The method according to claim 43, ~~characterized in that~~ wherein ~~said~~ the pulsed discharges are produced by a pulse generator including a capacitor acting as accumulator for an electric charge, and wherein energy stored in ~~said~~ the capacitor is used to produce ~~said~~ the discharges.

52. (New) The method according to claim 1, wherein a biasing switch is provided between the second pulse generator and the work piece, and wherein the biasing switch is opened if the magnitude of the pulsed current between the second electrodes is above a predetermined threshold.

53. (New) The method according to claim 52, wherein the biasing switch is an arc suppression component, which opens if a concentrated or diffused arc forms between the work piece and the anode.

54. (New) The method according to claim 52, wherein the biasing switch is a solid state switch.

55. (New) The method according to claim 43, wherein a biasing switch is provided between the second pulse generator and the work piece, and wherein the biasing switch is opened if the magnitude of the pulsed current between the second electrodes is above a predetermined threshold.

56. (New) The method according to claim 55, wherein the biasing switch is an arc suppression component, which opens if a concentrated or diffused arc forms between the work piece and the anode.

57. (New) The method according to claim 55, wherein the biasing switch is a solid state switch.